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IMPACT OF SYMPATHETIC RENAL DENERVATION: A RANDOMIZED STUDY IN PATIENTS AFTER RENAL TRANSPLANTATION (ISAR-DENERVE)

Moderated Poster Contributions
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Background: Recent data stress the need for better understanding of renal sympathetic denervation (RDN) and identifying patients who profit from RDN. Sympathetic overactivity is prevalent after renal transplantation (RTx), accompanied by post-transplant hypertension being a major cause of graft failure and cardiovascular comorbidity. This is maintained by sympathetic afferent activity arising from the native non-functional kidneys, while efferent activity to the graft modulating the RAAS is absent. In this setting, RDN allows a selective modulation of afferent activity. We therefore investigated feasibility and efficacy of RDN in RTx recipients.

Methods: RTx recipients with persistent hypertension were randomized 1:1 to receive RDN or medical treatment (NCT01899456). Patients had to be treated with at least three antihypertensive drugs, including a diuretic. Primary efficacy endpoint was reduction in office SBP at 6 months. Secondary endpoints were reduction of mean ambulatory blood pressure (ABPM). Safety endpoint was changes in renal function or renovascular complications.

Results: 18 patients underwent randomization. Mean (±SD) change in office SBP at 6 month was -23.3 ±14,5 mmHg (p=0.003) in denervation group compared with control group +1.33 ±13.6 mmHg (p=0.77) (p=0.001 for change difference between the groups). The change in systolic ABPM was at daytime -1.5 ±13.4 mmHg (p=0.76) vs. -5.18 ±12.6 mmHg (p=0.25) and at nighttime -10.38 ±12.8 mmHg (p=0.06) vs.1.97 ±12.2 mmHg (p=0.64) in denervation group compared to control group, (p=0.18 for nocturnal change difference between the groups). In denervation group, three patients converted from nondippers to dippers, none in control group (p=0.035). Safety endpoint was reached in none of the patients.

Conclusion: RDN is feasible and safe in RTx recipients with persistent hypertension. Our data indicate reduction of office SBP and enhancement of dipping response with tendency to reduce nocturnal BP in ABPM. These results suggest that, in absence of renal efferents, RDN in RTx recipients modulates central blood pressure pathways. However, larger sham-controlled studies will be necessary to verify the potential role of RDN in this population.